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## Minerals Planning in The Netherlands compared to the U.K.

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**Abstract**

In May 2003, the Dutch government announced the withdrawal of the government's role in mineral planning and raw materials supply. This meant that the clock had been turned back to 1976. By now the established planning system has been run down almost completely. The Dutch raw materials policy is based on only a few statements in the government's National Spatial Plan. Meanwhile import of aggregates from our surrounding countries is growing. In this article the down-fall of the Dutch minerals planning system is examined. In this article a comparison is made with the British planning system, which is still working. England has in contrast to The Netherlands a considerably higher level of self supporting.

**1. Introduction**

In The Netherlands big changes concerning the building and construction raw materials policy and the practice of supply have taken place over the last number of years. From 1976 on a planning system has been worked at by which the central government would get more grip on the minerals production planning. Lengthy discussions were held on what planning system would be introduced. Only 20 years later, in 1996, all of this became a statutory regulation. By doing so the national government could legally enforce local authorities, provinces and municipalities, to carry through extraction sites, in particular concerning regionally scarce commodities. In order to do so excavation tasks per province were developed on the basis of forecasting and an inter-provincial division model (Ike, 2004 and Ike, 1999). The national policy was laid down in voluminous National Structure Plan on Surface Raw Material (Ministry of Transport, Public Works and Water Management, 2000).

In spite of the improved planning system and an increased attention towards an effective spatial fitting-in of excavation areas, however, the authorities had major problems in convincing provincial authorities to allow excavations on their territories. These problems resulted in the fact that in 2003, less than seven years later, the clock had been turned back to 1976. The adaptations in the Minerals Extraction Law have been reversed for the greater part this year 2007. The initiative rests again with the private sector to apply for extraction permits. Market forces are (again) at the centre. Future projects will be judged by local authorities on their spatial qualities in particular.

Since 1976 in England, too, a national policy has been developed for the extraction of raw materials for the building and construction industry. Guidelines have been drawn up by the central government for licence-granting public bodies regarding the planning of clearing. They contain national objectives and national policies for minerals planning, but are much less extensive than the Dutch Structure Plan on Surface Raw Materials as mentioned before.

In England local authorities acting as licence-granting authorities have many more liberties: the national guidelines are indicative. Stakeholders are involved in the realization of excavation tasks and the Minerals Local Plan, lately called Minerals and Waste Development Framework. In the Netherlands this has been the case much less. In England they are much more prudent in involving the principle of the private sector, due to the fact that it is causing too many uncertainties. Because of the recent changes in the law with respect to spatial planning a tendency from a development-led system to a plan-led planning system (Planning and Compulsory Purchase Act 2004) is generally noticeable.

In this article the issue mentioned above is discussed in further detail by comparing the Dutch situation with the situation in England. In next section firstly the geological situation in the two countries is being discussed. Then in section 3 the production, import and

export of primary raw materials in The Netherlands and England will be further discussed. In section 4 the sudden change in the Dutch policy is being described, followed by section 5 in which the latest national policy on surface raw materials in The Netherlands will be gone into. Also a comparison with the British situation is made. In section 6 it is explained which plans in both countries at regional level are being drawn up. In section 7 the forward planning for minerals in both countries will be further analysed. In the two following sections the tax on surface minerals and sustainable development are being discussed briefly. The article will be rounded off with a number of conclusions.

## **2. Geology**

*In The Netherlands* the aggregates, which can be used as construction materials - such as gravel and sand - are restricted to unconsolidated sediments at or near the surface because of the almost complete absence of hard-rock outcrops. There is an abundant amount of fine sand because The Netherlands is situated on the estuaries of the rivers Rhine, Meuse en Scheldt, where the finer sand is deposited. Fine sand can be found throughout the country and the North Sea. Fill sand - the finer sand - is used for preparing building sites - raising land surface - sand for sand-limestone bricks, cellular concrete sand and asphalt sand (road construction). Besides, The Netherlands is lucky to have a number of - very small - sites where quartz sand can be extracted. Silica sand only occurs in the southern part of the province of Limburg near the town of Heerlen. The coarser kinds of sand, suitable for the production of cement concrete, only occur in some provinces in the eastern and the southern parts of the country. In general this means that further upstream the overburden gets thinner and the layers where the coarser sand is stored are thicker. Exploitable gravels mainly occur in the south-east of the country. Clay resources - for bricks and dike construction - are located in almost every province (Ministry of Transport, Public Works and Water Management, 2003b).

In The Netherlands 99% of the territory consists of Quaternary unconsolidated deposits (rivers Rhine, Meuse, the Scheldt and the Eems). Also large quantities of peat were formed in the large swamps. In the extreme south limestone (Cretaceous age) can be found. In the extreme east of the country also limestone (Triassic age) can be found. Also glacial deposits of sand and gravel are located in the Northern parts of the country (Ministry of Transport, Public Works and Water Management, 2003b).

Because, geologically seen, exploitable quantities of coarser sand only occur in certain parts of The Netherlands, the sand barren provinces need to get their supply of coarse sand from the provinces where coarse sand does occur. Consequently an inter-provincial distribution problem arises. In this context the expression 'regional shortage' is used. Since coarse sand is scarce in The Netherlands a lot of concrete sand is imported, particularly from Germany.

The *United Kingdom* has a wide variety of industrial and construction materials. These minerals range from Quaternary sand and gravel in southern England to Precambrian metamorphic rocks in Scotland.

Metamorphic rocks are largely found in the Scottish Highlands and islands and Northern Ireland with scattered outcrops in England and Wales. Volcanic rocks, lower Palaeozoic slates and greywackes can be found in large areas of Wales, the Southern Uplands of Scotland, and the Lake District. The Upper Palaeozoic Devonian to Permian successions consist mainly of clastic and carbonate sediments. Igneous intrusions and associated mineralisation are important in some areas of Palaeozoic rocks such as the midlands and south west of England and central Wales. These layers can be found mainly in parts of central, western, southwest and northern Britain. There are extensive areas of Mesozoic and Tertiary sediments in the south and east of England. Quaternary glaciation affected almost the whole country except the extreme southwest. This glaciation created widespread superficial deposits. In addition, there are extensive spreads of river channel and terrace gravel especially in the midlands and south of England. These are extensively exploited. Most of the construction and industrial minerals are of sedimentary origin. Igneous rock bodies are quarried intensively for crushed rock aggregates (Ministry of Transport, Public Works and Water Management, 2003a).

### 3. Production and consumption of raw materials

The population in the U.K. is about 3.7 times bigger than the population in the Netherlands (respectively 59.2 million and 16.2 million inhabitants). This also means that the consumption of building materials per head of the population in Britain is about three times higher on average. The consumption of fill sand is much higher in The Netherlands than in the UK, because the western and northern parts of the Netherlands have a peaty subsurface (see Table 1 and Table 2, footnote 2.). In this The Netherlands and the UK differ.

In The Netherlands the annual consumption of *concrete- and masonry sand* (coarse sand) is roughly 24 million tonnes, depending on the economic climate. The production in The Netherlands is at approximately 14 million tonnes in 2005. Particularly the finer types, are exported to Belgium (2,5 million tonnes). About 12,5 million tonnes, particularly the coarser varieties, are imported from Germany (see Table 1). The net import of coarse sand is rising steadily since 2000 (from zero in 1999 to 10 million tonnes now) (Ministry of Transport, Public Works and Water Management, 2005; commissie Tommel, 2007).

**Table 1: Production, Import, Export and Consumption in The Netherlands primary raw materials (a)**

Commodity	Production 1990-2000 (million tons)	Production 2005 (million tons)	Import 2005 (million tons)	Export 2005 (million tons)
Coarse sand	21,0	14,0 (b)	12,5	2,5
Gravel	7,0	3,5	13,4	0,3
Crushed rock	0,0	0,0	12,1	0,0
Limestone	1,5	1,3	1,3	0,0
Silica sand	0,5	0,5	0,5	0,2
Clay	3,4	4,7	0,3	0,1
Fill sand (fine sand)	74,0	90,0	0,0	2
Sand for lime-sandstone	3,6	2,6	0,0	0,0

(a) Ministry of Transport, Public Works and Water Management, Road and Hydraulic Engineering Institute, Productie en verbruik van beton- en metselzand en (gebroken) grind in 2005 (December 2006) and LCCO/WIG 2006.

(b) In 2000: 21,2 mt; in 2001: 19,8 mt; in 2002: 16,7 mt; in 2003: 15,2 mt and in 2004: 13,6 million tonnes (Commissie Tommel, 2007)

The annual consumption of gravel and crushed rock is roughly 31 million tonnes, depending on the economic climate. The production of gravel in The Netherlands in 2005 is approximately 3.5 million tonnes (see Table 1). Particularly the finer types, are exported to Belgium (0.3 million tonnes). About 13,4 million tonnes, particularly the coarser varieties, are imported from Germany. Besides much crushed rock is imported from Norway and Scotland (12.1 million tonnes in 2005). The production of gravel has meanwhile fallen to 3.5 million tonnes a year. During the decade 1970 to 1980, the annual production was 13 to 14 million tonnes. The annual consumption during that period was 18 million tonnes. At the moment The Netherlands are self-supporting for only 10% of their gravel/crushed rock consumption.

**Table 2: Production, Import, Export and Consumption in Great Britain Primary raw materials (a)**

Commodity	Production (a) 1990-2000 (million tonnes)	Production (b) 2005 (million tons)	Import (a) 2000 (million tons)	Export (a) 2000 (million tons)
Sand and Gravel (1)	116 – 82 (2)	95	12,5	7,3
Crushed rock	161 – 130 (2)	141	12,1	2,4
Limestone	34 – 28	25	1,3	0,2
Silica sand	3,6 – 4,8	4	0,5	-
Clay	9	8	0,3	-

(a) Ministry of Transport, Public Works and Water Management, Road and Hydraulic Engineering Institute (2003a), Construction Raw Materials Policy and Supply Practices in North western Europe, Facts & Figures – England, Scotland and Wales, Publicatierieks Grondstoffen 2003/03.

(b) Web site British Geological Survey.

(1) Including land-won, marine dredged, and sand and gravel used for fill.

(2) Including 66 millions tons fill.

The decrease in the production of gravel in The Netherlands is especially due to planning availability. In principle there are sufficient quantities in The Netherlands. These quantities, however, are to be found in the southern province of Limburg. This province had already made known in the 90's, that it did not want to act as the province to be exploited for the good of the rest of the country (the 'Not in my back yard' attitude)

From Table 2 it appears that the UK is much more self-supporting than the Netherlands. This may be due to the facts that 1) the country is bigger and 2) the country is less densely populated and 3) the geological occurrences are more spread across the country.

#### **4. Withdrawal of the government's role in the Netherlands**

In 1996 - after 16 years of preparation - an *amendment to the Minerals Excavation Act* came into force. The aim of this amendment was to simultaneously attune the sectoral and spatial trail. Another important issue was to improve the coordination between the state and the provinces, and the coordination for the required permits. After the revision, in 1996, the Minerals Extraction Law partly functioned as Minerals Planning Act.

From 1996 onwards, the government's extraction policy has been expressed in *the National Structure Plan on Surface Raw Materials* (Part 1: intended content; Part 2: reactions; Part 3: final governmental decision; Part 4: approval by both Chambers of Parliament). The structure plan was drawn up under the first responsibility of the Ministry of Public Works and Water Management (Ministry of Transport, Public Works and Water Management, 2000). The Minister of Housing, Spatial Planning and the Environment also subscribed the document (second subscriber).

In May 2003, the Secretary of State of Public Works and Water Management announced the withdrawal of the government's role in mineral planning and raw materials supply. As a consequence, Part 3 of the *Second Structure Plan* was not published and effectuated. The main reasons for the reduction of the governmental role were *financial cutbacks*, and the encouragement of a *more market-oriented extraction sector*.

#### **5. Policy on surface raw materials at national level**

As a consequence of the new market-oriented approach in 2003 the Dutch government had to remove the National Structure Plan on Surface Raw Materials out of the Minerals Extraction Law. Since April 2004 the national policy on surface raw materials has been integrated in *the National Spatial Plan* in Part 3: final governmental decision (Ministeries van VROM, LNV, VenW en EZ, 2004).

The text is summarized in only one and a half pages in the National Spatial Plan (section 4.8.1). The second National Structure Plan consisted of 277 pages. In the National Spatial Plan it is stated that the governmental role in steering supply and demand will be reduced. The extraction of surface raw materials will be left to the market. If necessary and possible, the cabinet will take measures to remove obstructions in policy and in regulations and legislation. For this purpose the Ministry of Economic Affairs and the Ministry of Transport, Public Works and Water Management have developed a plan with conditions for an optimal market economy.

The aim of the policy with respect to raw building materials is to stimulate the extraction of these materials in a socially responsible way. The first basic principle is that raw materials should be used economically and for high-grade applications as much as possible. The maximum use of secondary raw materials or renewable raw materials such as timber is also a basic principle. The national and local authorities should set a good example to others.

As far as possible the extraction of raw materials should be multifunctional in order to grade up spatial quality. This means that a socially desirable function should be developed associated with the extraction such as recreation facilities, housing on a waterfront, water management, nature conservation, etc. In 2006 a book was published in which the perception

in the National Spatial Plan is illustrated on the basis of a number of good examples (Ministries of VROM, LNV, VenW and EZ, 2006).

In the England, at national level, they work with Mineral Planning Guidance's (MPGs) and Marine Mineral Guidance's (MMGs). A total of 15 MPGs have been published (see for example: Department of the Environment, Transport and Regions 1991, 1996 and 1996a). In 2005/2006 the Mineral Planning Guidance's MPGs 1, 2, 3, 6, 11 and 12 were partially or totally replaced by the following Minerals Policy Statements (MPSs): MPS1: *Planning and Minerals* (core guidance with annexes on specific minerals) (Department for Communities and Local Government, 2006), and MPS2: *Controlling and mitigating the environmental effects of minerals extraction in England* (Office of the Deputy Prime Minister, 2005).

In addition there are guidelines on marine minerals dredging which do not come within the UK planning system, which extends only to median low water mark, but is relevant to supply of aggregates: MMG1 (Extraction by Dredging from the English Seabed) and MMG2 (Guidance on the Extraction by Dredging of Sand, Gravel and other Minerals from the English Seabed is in preparation).

As far as Wales and Scotland are concerned similar guidelines have been drawn up with regard to the Policy on Surface Raw Materials at national level.

A completely new component in the Dutch National Spatial Plan is the so-called *surface raw material assessment* (SRMA). For intended new spatial plans outside the built-up area the initiator has to comply with the following basic principles (National Spatial Plan, section 4.8.1): a) The effects on the provision of surface raw materials have to be taken into consideration, b) The geological occurrences of scarce surface raw materials such as concrete and masonry sand (coarse sand), gravel, limestone, clay for bricks and silica sand also have to be taken into consideration. In this way the excavation possibilities will not be obstructed for future generations. c) The possibility of combinations of raw material excavations and other functions must also be taken into consideration. Under particular circumstances, in such cases more raw materials may be extracted than strictly necessary.

It is unknown to what extent the provinces, municipalities and property developers will elaborate the above-mentioned specification of the SRMA. Research has already been carried out into the various points of view, expectations and interpretations regarding the SRMA (TNO, 2005). From this research it appears that the private sector does not expect any advantage to come out of this test, whereas the views of the provinces and the municipalities on the best way of interpreting this test strongly differ. The Minister therefore, has said that this test can be opted out, should the parties concerned file a request. One can ask oneself whether this test has been thought through well before.

In the new situation (since April 2004) the role of spatial planning regarding raw materials will be supported by the Ministry of Housing, Spatial Planning and the Environment (National Spatial Plan) and the Ministry of Agriculture, Nature Management and Fisheries (concerning nature management). The policy on the sustainable use of raw materials will become the responsibility of the Ministry of Housing, Spatial Planning and the Environment. The role of the Ministry of Transport, Public Works and Water Management will decrease (only state waters). The Dutch state is the owner of the shells, gravel, sand and clay at or near the surface of the Continental Shelf (art 4b Excavation Act, revised in 1996). The Dutch state is also the owner of the seabed within its borders and the large inland waters (rivers). The Ministry of Economic Affairs will be the first contact for the raw materials extracting industry.

## **6. Regional planning**

In recent years the Dutch provinces developed *Regional Mineral Extraction Plans*. The provinces are free to make such plans; these plans were and are still not compulsory. The Spatial Planning Act enables the provincial council to make a *Regional Plan* or to revise an existing Regional Plan. Parts of a regional plan can be elaborated later. Most provinces have integrated their Regional Plan, the provincial Environmental Policy Plan and the provincial

Water Management Plan in one comprehensive plan. In addition the provinces are allowed to draw up a Mineral Extraction Policy Plan (as an elaboration of the Regional Plan).

Since 1996 a province could designate two types of extraction locations: an (rough) *extraction zone* or a (detailed) so-called “*extraction site*”. In a Regional Spatial Plan an “*extraction site*” had a level of detail of a Local Land Use Plan (municipal level). It was possible to appeal against an “*extraction site*” in a Regional Spatial Plan. An appeal could be lodged with the Council of State (Department of administrative jurisdiction). The possibility to designate an “*extraction site*” was laid down in the Minerals Extraction Law (revised in 1996). Shortly this possibility will no longer be an option. From then on the provinces can only allocate extraction zones, according to the Spatial Planning Act. In the case of an extraction zone in a Regional Spatial Plan *objections* can be made to the Provincial Council (no appeal). Appeal can be made to the Council of State when the extraction zone has been incorporated into the Local Land Use Plan (municipal level).

A province can also indicate search areas with respect to mineral reserves. In this way a province can protect these areas against developments, which might obstruct mineral extraction in the future. The *Local Land Use Plan* is a compulsory plan for the municipal territory and is determined by the local government. Through this, citizens are bound. Some municipalities make a construction permit compulsory for the operators. This construction permit has to be applied for to the municipal executive. Regulations might be attached to this permit.

The Ministry of Transport, Public Works and Water Management is responsible for the State Waters and the North Sea. For these waters also Regional Mineral Extraction Plans have been developed. In the National Spatial Plan it is announced that the extraction of sand from the North Sea is of national interest. Deep extraction of coarse sand will be allowed. Detailed conditions are given in the Second Regional Mineral Extraction Plan for the North Sea (Ministry of Transport, Public Works and Water Management, 2004)

England is divided into 9 Economic Regions. For each region a *Regional Planning Guideline* has been drawn up, in which the desired developments within the region are written down. The division mentioned coincides with the Regional Aggregates Working Party Regions (RAWP Regions). These RAWP-regions are again classified into so-called Mineral Planning Authorities (MPAs).

In England recently the Planning and Compulsory Purchase Act 2004 became effective. On that basis MPAs have to draw up a *Minerals and Waste Development Framework* (MWDF), containing plans for the future provision of minerals and the disposal of waste in their area. The first plans should be ready by the end of 2007. MPAs have three tasks: 1) forward planning, 2) development planning and 3) development control. These plans should account for the guidelines at both national level and regional level.

## 7. Forward planning for minerals

In The Netherlands the production of nationally abundant minerals such as *clay*, *fill sand* and *sand for lime-sandstone* did not require planning and co-ordination. The role of the national government was limited to monitoring (identification of supply problems). In the first and second National Structure Plan on Surface Raw Materials only quantitative goals (so-called excavation tasks) have been set for raw materials if the possibilities for extraction were limited and when the co-ordination between the government and the provinces gave reason for this. For *gravel* the province of Limburg had an extraction task of at least 35 Mt for the period 1999-2008. This quantity has been linked to the river-widening projects of the river Meuse. Consequently 70 Mt could be won. In the future the province Limburg will only continue to meet the regional demand after the widening projects are finished. In the future the extension of the *limestone* quarry of the cement industry in the south of The Netherlands is still insecure. The amount of *silica sand* that will be extracted in the province of Limburg during the period 2000-2025 will be at least 19 Mt. Future extension is disputable because the occurrences are situated in valuable areas.

For *concrete and masonry sand* (*coarse sand*) the provinces and the Minister of Transport, Public Works and Water Management have agreed that the provinces will

guarantee the extraction of 143 Mt of coarse sand during the period 1999-2008. The Minister guaranteed 27 Mt from the State Waters during the same period (Commissie Tommel, 2005). The concept of extraction tasks was not quite clear. On the one hand they had the status of “agreements between provinces and the Minister”, on the other hand they had the character of “imposed excavation tasks”. For the period 1999-2008 the provinces and the Minister agreed on an underproduction of about 20%.

A *division model* was used to share the excavation tasks between the provinces. In the division model it was assumed that the relative sand-excavation concentration and/or effort per province should not exceed a specific maximum. In this way the provinces with a comparatively large demand but limited excavation possibilities would not be burdened disproportionately (Ike, 1999). The theoretical results of the division model have been used only partly in policy making. The calculating model seemed to function as a frame of reference.

*Statistical forecast models* for future demand – based on a relation between historical demand and historical investments in the construction sector - have only been formulated for gravel, coarse sand and cement (limestone). For the other minerals it was not possible to generate a statistically reliable relation between demand and investments. For clay, filling sand, silica sands and sand for lime-sandstone future demands have been made based on the experience, insight and expectations of the industry (Ike, 2000 and Ike, 2004).

The national government decided to abandon its role in mineral planning. This means that there will be no more excavation tasks in the future for surface raw materials for the 12 provinces and State Waters. The effects of a market-oriented approach will certainly be the largest for the concrete and masonry sand provision. In the future minerals planning will especially be provided for by the provincial mineral extraction plans.

Consultations on the setting of tasks among the provinces themselves and between the provinces and the ministry always went by with great difficulty. The setting of tasks on concrete and masonry sand were often arranged late or were not arranged at all. The heart of the problem was due to the fact that consultations were only held between the provinces and the ministry. Other stakeholders only participated from the sidelines. Moreover, the outcome of the consultations could not be wrapped up in a so-called ‘package deal’, because consultations only concerned quantities.

In England also the Regional Aggregates Working Parties (RAWPs) and the ministry are involved in the setting of tasks. Each RAWP is presided by a County Planning Officer and consists of members of the Mineral Planning Authorities, the minerals extraction industry, ecology groups and urban and rural planners in the England (Office of the Deputy Prime Minister, 2004). The setting of tasks are arranged for land-won sand & gravel and for land-won crushed rock. Furthermore, assumptions are drawn up regarding the quantities of marine sand&gravel, alternative materials and the UK net imports (office of the Deputy Prime Minister, 2003).

RAWP-regions are on average about 4.5 times larger than our Dutch provinces. The setting of tasks are therefore allotted at a much higher geographical scale unit compared to the situation in the Netherlands. Furthermore, more stakeholders are involved in the realization of the setting of tasks.

The planning of major minerals sites in The Netherlands was very often a very difficult matter, mostly because these extractions create major lakes, which disturb the geographical structure. In The Netherlands no hard-rock outcrops are found. Small amounts of sand and gravel are produced in “dry” quarries. Part of the excavations take place in waters. In England 60% consists of crushed rock material.

Where minerals are produced for the consumption in *other regions*, very often a strong Not-In-My-Backyard (Nimby) feeling appears. This especially occurs in the case of large coarse sand extractions in the southern and eastern parts of The Netherlands. Where the minerals are used for the regions in which they are produced, there are far less Nimby feelings and in some cases none at all. A good example is the production of fill sand and clay. These minerals can be found in almost every part of The Netherlands. Fill sand is mostly used for



projects nearby. Despite the fact that every year 80 million tons of fill sand is needed, the planning of these sites causes little protest.

Further, it can be concluded that the past few years the relatively small operators were far more successful than the larger operators, who were trying to establish much larger sites.

## **8. Tax on surface minerals**

In September 1999 the Dutch State proposed the introduction of a tax on surface minerals. The main goal of this proposal was to stimulate the more economical use of raw materials and to increase the use of secondary raw materials. A study carried out in May 2000, however, showed that the tax would only have a small positive effect. More important were the negative aspects of the introduction of this tax. Negative aspects were expected in the border regions, where the introduction of the tax would result in an increased import.

As a reaction, the building industry proposed the introduction of a tax on new building projects, on the condition that the tax on surface minerals would not be introduced. An incentive fund for sustainable raw building material supply would be established. Profits from the tax would be paid into this fund and this money would be used for research projects to stimulate the use of alternative materials where scarce materials were used (concrete and masonry sand). The Cabinet decided that the tax on new building projects would not be achievable and as a counteroffer the Cabinet proposed the establishment of a fund consisting of contributions from the building industry. This money would then be used for research.

In April 2002 in the UK a levy of £1.6 / tonne on new aggregates quarried in the UK was introduced for sand, gravel and crushed rock, including aggregates dredged from the seabed within UK territorial waters. The tax is also levied on imports but exports are relieved. The objectives of the levy are to address the environmental costs associated with quarrying, to reduce the demand for virgin aggregates and to encourage the use of recycled materials. The levy is not a revenue-raising tax. 10% of the levy is paid into the Aggregates Levy Sustainability Fund, which funds work to reduce the environmental impact of quarrying aggregates.

## **9. Sustainable development**

Sustainability concerning minerals planning in The Netherlands is defined in terms of recycling and the use of alternative and/or renewable materials. Especial policies concerning recycling have been very successful (Meulen van der M. J., 2005). A major part of the National Structure Plan on Surface Raw Materials was devoted to recycling and the use of alternative and renewable materials. Many guidelines in the National Structure Plan on Surface Raw Materials were related to sustainable matters. Recent research has shown that the provinces have adopted these assumptions in their Regional Mineral Extraction Plans, since the National Structure Plan on Surface Raw Materials has expired (Koopmans, 2007).

## **10. Conclusions**

In the Netherlands the extractors of coarse sand assumed that the provinces would take the lead in developing new extraction sites on the basis that the setting of tasks were allocated to the provinces by the national government. But that was the situation before 2003. Since that policy is being turned back the companies themselves have to start off attractive initiatives again. This will be far from easy. Up to this moment the number of initiatives for such projects is still very vague. Also the scale and the speed of establishing those projects is still not clear. The National Government at the time considered the extraction of coarse sand a political priority. But subsequently that same government failed when decisions had to be pushed through in order to realize the setting of tasks. As a consequence of that and other factors the excavation of coarse sand to meet the national demand has become problematic.

The last few years the regional extractors in the Netherlands have met with less problems in developing small sand excavations to meet the regional demand. These excavations are less problematic. From this point of view one could advocate little influence by the national government and excavating at a smaller scale. The excavation of fill-sand has

never been a real problem in the Netherlands since this product is widely available across the country.

As for the excavation of gravel the national government at the time went along with the province of Limburg to cut down on their task setting regarding gravel. Consequently only very little gravel is still extracted on Dutch soil. In practice one could consider this an implicit NIMBY-behaviour at national level. The national government agrees that 90% of the demand for gravel/crushed rock is imported from abroad (Scotland, Norway and Germany).

There is a considerable chance that mineral extractions will be shifting more and more to the peripheral areas of Europe, due to the NIMBY-behaviour in densely populated regions. One could ask oneself the question, whether this is desirable from a sustainability point of view, since these aggregates have to be conveyed along very great distances. The French President announced in October 2007 a fuel surcharge on all products, in relation to the travel distance to the consumer. Should this principle be adopted by Europe, the import of raw materials from distant regions will be under pressure. If so, again the question will arise whether the national government has to take the lead in realizing excavations close to home.

In view of social resistance it seems better to realize excavations on a smaller scale in densely populated areas. The smaller regional extractors in the Netherlands have always been doing that, without stepping in the limelight too much.

The English planning system, unlike the Dutch system, has always been working with an extensive set of guidelines. Further interpretation of the tasks is left to the regions. However, in the Netherlands the national government even allocated search areas (Ministry of Transport, Public Works and Water Management, 2000). The fact that production planning in the Netherlands is doomed to fail has mainly to do with the fact, that when the setting of tasks are to be divided only few stakeholders are involved. A higher population density, a smaller geographical scale and the fact that nearly always water areas come into existence, have also contributed to the failure. The reason why the British production planning system works better has undoubtedly to do with the British planning culture and the British planning tradition.

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